

REMARKS

Claims 1-10 are pending in the application. Claims 8-10 are withdrawn as directed to a non-elected invention. By this Amendment, Claims 6-7 are amended, new Claim 11 is added, and a Substitute Specification and a replacement Abstract are provided. A marked up copy of the Substitute Specification is also filed herewith, showing changes to the specification.

Objection - Specification

In the Office Action, the Examiner objects to the specification. Applicants respectfully submit that the Substitute Specification filed herewith obviates the objection. A marked up copy of the Substitute Specification is also filed herewith. Withdrawal of the objection to the specification is respectfully requested.

Claim Rejection - 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejects Claims 1 and 7 under 35 U.S.C. §102(b) over an article entitled "Development and Fabrication of a Bi-2223 Racetrack Coil for Generator Applications", authored by Kenneth G. Herd, *et al.* (Herd). This rejection is respectfully traversed.

Herd does not disclose a *high-voltage* insulation system, as recited in Claim 1. Herd is directed to a superconducting coil for generator applications that functions at cryogenic temperatures. For example, Table 4 on page 534 of Herd discloses that only 100 millivolts or 0.1 volts are necessary to generate the maximum coil current of 34 amperes at an operating temperature of 20 Kelvin. Even Table 3 indicates that at an operating temperature of 77 Kelvin, only 10.0 volts are applied to generate a coil current of 15

voltages disclosed in Herd of 0.1 volts and 10.0 volts are not "high-voltage", and therefore Herd fails to disclose the system of Claim 1.

Herd also fails to disclose or suggest wherein glass fibers in the form of fibers or fabrics are added to the base fabric, and wherein the base fabric comprises cellulose, as recited in Claim 7.

Specifically, Herd discloses solder-laminating 0.008 cm copper foil onto both sides of Ag-sheathed Bi-2223 tape, insulating the resulting tape with paper, winding the insulated tape to form a coil, wrapping a heat exchanger around the coil, "overbanding" 0.6 cm fiberglass cloth over the heat exchanger, and finally potting the coil assembly with low-viscosity epoxy using a vacuum pressure impregnation cycle so that the epoxy wicks through the entire assembly (including the paper insulation). See, for example, Herd at page 531, column 1; page 532, column 2; and page 533. Since in Herd the conductive tape is insulated with paper before being wound into a coil, and since the coil is then wrapped with a heat exchanger before finally being "overbanded" with fiberglass cloth, the fiberglass cloth is not part of the paper insulation. The fiberglass cloth may be considered to have been added to the coil, but was not added to the paper. Accordingly, Herd fails to disclose or suggest features of Claim 7 wherein glass fibers in the form of fibers or fabrics are added to the base fabric, wherein the base fabric comprises cellulose, as recited in Claim 7.

For at least the above reasons, Applicants respectfully submit that Herd fails to disclose or suggest all features recited in Claims 1 and 7. Withdrawal of the rejection of Claims 1 and 7 under 35 U.S.C. §102(b) over Herd is respectfully requested.

Claim Rejections - 35 U.S.C. § 103(a)

Claim 2 - Herd & AAPA

The Examiner also rejects Claim 2 under 35 U.S.C. §103(a) over Herd in view of Applicants' Admitted Prior Art. This rejection is respectfully traversed.

Applicants respectfully submit that Applicants' Admitted Prior Art fails to overcome the deficiencies of Herd set forth above with respect to independent Claim 1, from which Claim 2 depends. Accordingly, the asserted combination of Herd and Applicants' Admitted Prior Art fails to disclose or suggest Claim 2. Withdrawal of the rejection of Claim 2 under 35 U.S.C. §103(a) over Herd in view of Applicants' Admitted Prior Art is respectfully requested.

Claims 3-5 - Herd & Gainer

The Examiner also rejects Claims 3-5 under 35 U.S.C. §103(a) over the Herd reference in view of U.S. Patent No. 3,775,719 to Gainer, *et al.* (Gainer). This rejection is respectfully traversed.

Gainer discloses as prior art, coil insulation formed by cellulose immersed or impregnated in mineral oil, and not in a cured polymer matrix as recited in Claim 1. Gainer further indicates that physical and electrical properties of cellulose immersed or impregnated in mineral oil deteriorate at an accelerating rate when the operating temperature rises above about 100°C, which is a problem in power transformers. Gainer solves this problem by *replacing the cellulose* with a specialized polymer (thermosetting 1,2-polybutadiene hydrocarbon resins and certain copolymers thereof). See, for example, Gainer at Column 2, Lines 8-12, Line 19, and Lines 24-26. Also, the operating

temperatures taught and contemplated by Gainer are well above ambient temperature, rather than below ambient temperature as recited in the presently pending claims.

Accordingly, Applicants respectfully submit that it would *not* have been obvious to a person of ordinary skill in the art at the time of the invention to use a solid material having pressboards *and* a cured polymer matrix, as encompassed by Claims 3-5, because Gainer teaches *replacing* cellulose with polymer and thereby *teaches away* from using a solid material having pressboards and a cured polymer matrix. Therefore the asserted combination of Herd and Gainer is improper because motivation to combine is lacking, and thus the Examiner has failed to present a *prima facie* case of obviousness.

With respect to Claim 4, the Examiner asserts that it would have been obvious to provide an intermediate layer separating at least two layers of pressboards, because providing an intermediate layer "involves only routine skill in the art". This assertion is respectfully traversed.

In essence, the Examiner is arguing that the features recited in Claim 4 are within the capabilities of a person of ordinary skill in the art. However, MPEP § 2143.01 restates the well-established rule that the fact that the claimed invention is within the capabilities of one of ordinary skill in the art, is *not* sufficient to establish a *prima facie* case of obviousness. See *Al-Ste Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed.Cir. 1999). In addition, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Examiner has not provided any motivation that would have caused a person of ordinary skill in the art at the time of the invention, to provide an intermediate layer separating at least two layers of pressboards as recited in Claim 4. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness with respect to Claim 4.

For at least the above reasons, withdrawal of the rejection of Claims 3-5 under 35 U.S.C. § 103(a) over Herd in view of Gainer is respectfully requested.

Claims 6, 11 - Herd & McDermott

The Examiner also rejects Claim 6 under 35 U.S.C. §103(a) over Herd in view of U.S. Patent No. 4,146,858 to McDermott (McDermott). This rejection is respectfully traversed.

McDermott fails to overcome the deficiencies of Herd discussed above with respect to Claim 1, from which Claims 6 and 11 variously depend.

In addition, the passages of McDermott cited by the Examiner disclose a Teflon™ sheet 70 is applied to an outer surface of a coil, as shown in Figure 8 of McDermott, wherein the individual windings of the coil are each wrapped with Kapton Type F film 49 as shown in Figure 6 (see also Column 3, Lines 12-17).

Accordingly, McDermott fails to disclose or suggest a base fabric comprising a laminate having at least two layers of pressboards, which are separated by at least one intermediate layer, wherein carbon in the form of fibers or fabrics is added to the intermediate layer, as recited in Claim 11.

For at least the above reasons, Applicants respectfully submit that the asserted combination of Herd and McDermott fails to disclose or suggest all features recited in

Claim 6 and 11. Withdrawal of the rejection of Claim 6 under 35 U.S.C. §103(a) over Herd in view of McDermott is respectfully requested.

Conclusion

Applicants respectfully submit that the application is in condition for allowance. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,
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